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July 20, 2000

Mr. Dale Hatfield
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, N.W.
Room 7-A-340
Washington, D.C., 20554

Re: **Final Service Disruption Report**

Dear Mr. Hatfield:

Pursuant to the requirements established in the Report and Order in CC Docket No. 91-273 (Amendment of Part 63 of the Commission's Rules to Provide for Notification by Common Carriers of Service Disruptions), **SOUTHWESTERN BELL** submits the attached **Final** Service Disruption Report associated with a service disruption in **Tulsa-Elgin, Oklahoma** on June 20, 2000.

An Initial Service Disruption Report was faxed to the FCC's Monitoring Watch Officer on that date.

Please stamp and return the provided copy to confirm your receipt. Please contact me if you have questions regarding this service disruption.

Sincerely,

Jonathan J Boynton

Enclosures

CC: Bob Kimball
Kent Nilsson

Southwestern Bell

A member of the SBC global network

Retention Period: 6 Years

FCC SERVICE DISRUPTION REPORT

Type of Report: ☐ Initial Report ☐ Update ☒ Final

Occurred: Date: 06-20-2000 Time: 2:38 CST

Ended: Date: 06-20-2000 Time: 4:40 CST

Duration (in minutes): 122 minutes

☒ 50,000 or More Customers
☐ 30,000 - 49,999 Customers
☐ Fire incident ≥ 1,000 lines
Special Offices/Facilities
☐ 911
☐ Major/Medium Airport
☐ NCS Request

Geographic Area Affected: Offices isolated in Oklahoma:
Tulsa Elgin local and tandem + 25 remotes
Muskogee, Sallisaw, Tahlequah, McAlester, Miami, Cushing, Bartlesville, Cushing, Associated remotes

Estimated Customers Affected:

Tulsa-Elgin	152,749
Outstate	204,527
911	282,230

Type(s) of Services Affected:
☐ Local (Intraoffice) ☒ IntraLATA ☒ InterLATA ☐ 800
☐ LIDB ☐ Operator Services ☒ Interexchange ☒ Switched Access (interoffice)
☒ Cellular ☐ International ☒ E911/911 ☐ FAA ☐ All

Estimated Blocked Calls: 104,421

Apparent or Known Cause of the Outage:

On 6/19/00 at 21:43 the transport and tandem switch power plants (2) in the Tulsa Elgin complex reverted to battery backup state due to a tripped commercial AC circuit breaker. Proper alarms were generated by the equipment and reported to the surveillance group in the Kansas City NOC. The resulting ticket was handed off to Dispatch and loaded to a LFO technician for resolution. Over the following hours the alarm was not cleared and the batteries remained in a state of discharge.

At 02:38 on 06/20/00, transport facilities began to fail due to power plant voltages falling below the equipment's normal operating range. By 03:03 the failures had resulted in an isolation of the Tulsa 911 PSAP and both the tandem and local switches in the Elgin complex. Outstate offices (including independent companies) were also toll isolated/affected within the LATA. The tandem (911 switch), while affected by low voltage on its plant, never lost the ability to process calls.

At 04:04 the tripped breaker was reset and the power plants began to recover. By 04:40 the 911 isolation had cleared and a majority of the transport facilities recovered. There was national media coverage of this event.

Root Cause is Procedural - Southwestern Bell - Training adequate but insufficient application followed.

Name and Type of Equipment Involved:

Circuit Breaker:
GE type AK-3A-75
Transport Power Plant:
302B with Loraine 1231 Intelligent Controller
Tandem Power Plant:
Lucent Lineage 2000

Specific Part of Network Involved: Transport and Tandem Power Plants

Methods used to Restore Service: Tripped breaker was reset

Steps Taken to Prevent Recurrence:

1. Southwestern Bell Network Operations Center (NOC) technicians have been counseled on Battery On Discharge (BOD) procedures. Each responsible NOC manager has met personally with each technician to review the procedures. Each Technician received a copy of the procedures.
2. The option in the Elgin DMS switch that governs reporting of BOD alarms was set to report the condition only once. The option has been changed to report the condition every 15 minutes until the alarm is clear. This option also stimulates annunciation every 15 minutes. All DMS and Ericsson switches in the region are being examined for this option. Options will be changed as necessary.
3. Work is in progress to script the Southwestern Bell Network Monitoring and Analysis (NMA) system to generate a ticket on ALL central office BOD alarms with specific verbiage stating, "immediate escalation to a manager is required."

Applicable Best Practice: Southwestern Bell reviewed the Network Reliability: A Report to the Nation, Section B, dated June 1993 and Network Reliability: The Path Forward, Focus Group I, Network Reliability Performance, dated April 1996 and evaluated all recommendations and best practices. Based on the Root Cause analysis the most appropriate focus area is:

Power Focus Team Analysis
Reference: 6.6.3.1, 6.6.3.2 and 6.6.3.3
Alarms and Remote Monitoring

- Each company must have an alarm strategy that ensures that power problems are promptly identified and efficiently addressed. This strategy must incorporate a host of

operational and organizational factors. Initial provisioning, ongoing maintenance, and alarm response must be integrated. In general, simple systems should be used.

- Arrange the alarm to repeat every 15 minutes.
- Highlight the battery discharge at the remote center so that it is virtually impossible to ignore. Provide escalation procedures for handling battery discharge alarms that stay in, particularly for major facilities.

Best Practices Used: Southwestern Bell observes those practices that are consistent with providing outstanding customer service.

Analysis of Effectiveness of Best Practices: The NMA system is being scripted to identify battery on discharge alarms and generate a critical BOD ticket every 15 minutes. NOC technicians have been instructed to immediately notify a manager of the BOD condition when a critical BOD ticket has been received. In addition, the critical BOD condition will actuate an audible signal in the NOC every 15 minutes until condition is properly cleared.

Prepared by: Denise Buschfort
Telephone: 210-886-4586
Date submitted: 07-20-2000
Time: 17:00 CST

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Southwestern Bell

A member of the SBC global network

Retention Period: 6 Years

FCC SERVICE DISRUPTION REPORT

Type of Report: ☒ Initial Report ☐ Update ☐ Final

Occurred: Date: 6/20/2000 Time: 2:33 CST

Ended: Date: Time:

Duration (in minutes): Ongoing

☒ 50,000 or More Customers
☐ 30,000 - 49,999 Customers
☐ Fire incident ≥ 1,000 lines

Special Offices/Facilities
☒ 911
☐ Major/Medium Airport
☐ NCS Request

Geographic Area Affected: Tulsa, Oklahoma

Estimated Customers Affected: 627,875

Type(s) of Services Affected:
☐ Local (Intraoffice) ☐ IntraLATA ☐ InterLATA ☐ 800
☐ LIDB ☐ Operator Services ☐ Interexchange ☐ Switched Access (interoffice)
☐ Cellular ☐ International ☐ E911/911 ☐ FAA ☒ All

Estimated Blocked Calls: Investigation pending

Apparent or Known Cause of the Outage: Loss of commercial AC power

Name and Type of Equipment Involved:

Specific Part of Network Involved: DCS frames in the Tulsa-Elgin Central Office

Methods used to Restore Service: Commercial power restored

Prepared by: Denise Buschfort **Telephone:** 210-886-4586
Date submitted: 6/20/2000 **Time:** 07:15 CST